

The atlas also contains five maps showing the distribution of the nebulae in the northern and southern hemispheres according to the various classes into which they are generally divided. Mr. Stratonoff states that the law which operates to cause the galaxy to be poor in nebulae is a general one and extends to all classes of these objects, bright, feeble, large and extended. The nebulae, however, do not appear to have been studied from a spectroscopic point of view, as it is well known that the gaseous nebulae are chiefly found in the Milky Way.

The last map is devoted to star clusters in both hemispheres, and shows that these objects are intimately connected with the galaxy, the globular clusters, as distinct from star clusters generally, being the only ones which show no tendency to accumulate in this region.

Mr. Stratonoff has executed a laborious piece of research, and we congratulate him on making so interesting a contribution to stellar literature. HOWARD PAYN.

### THE GEOLOGICAL SOCIETY AND ITS MUSEUM.<sup>1</sup>

THE Geological Society of London, which was founded in 1807, began in early days to accumulate a collection of rocks and fossils, minerals and recent shells; and when, in 1828, the Society was provided with apartments in Somerset House, adequate space was afforded for the arrangement of the museum. Although many specimens were distributed throughout the rooms, two of these were specially set aside for the museum, an upper room containing the foreign specimens and a lower room mainly for the British rocks and fossils, while the minerals and recent shells were stored in cabinets in the smaller library. The museum then supplied a real educational want, and was of great service in preserving specimens which illustrated many of the papers read before the Society and published in its *Transactions*. Its state may be judged of from the Report of the committee in 1836; they express "the pleasure they derived from the excellent state of preservation of the whole museum, and from the unwearied zeal and discriminating skill displayed by the curator in arranging the collections." For fourteen years William Lonsdale devoted himself to the welfare of the Society, not only reorganising the museum but editing the publications. He retired in 1842 and was succeeded by Edward Forbes. There is no doubt that in those days the museum was fully appreciated, and the lower room particularly, with its cosy fires, was in winter time a pleasant resort for conversation and study.

Meanwhile, however, the work of the Society increased, the library growing especially, while the museum made little progress, and although a curator (who gave his whole time to the museum) was now and again appointed for a period, it was not possible to offer remuneration sufficient for the purpose; and increasing difficulty was felt in keeping the collections properly named and in proper order. In 1868 the Council "decided on the discontinuance of the formation of a general collection," and restricted it "in future to specimens illustrative of papers read before the Society and those received from abroad." In 1874 the Society removed to its present rooms in Burlington House, and took the opportunity to present "superfluous duplicates" to the British Museum, the Museum of Practical Geology and other institutions. Since this date, however, the museum, while occupying valuable space, has been of comparatively little service to science or to any of the fellows. The collection, as a whole, has been sadly neglected, owing to the fact that the other work of the Society has fully occupied the officers. It has been realised, too, that the want which the Society in its earlier days supplied was now better supplied

elsewhere, and that the fellows have ceased to take much personal interest in the museum. As Sir John Evans remarked, in his address to the Society in 1875, "the best home for a collection of British specimens was at the headquarters of the Geological Survey" in the Museum of Practical Geology. In 1896 a proposal was made to transfer great part of the Geological Society's collection to the British Museum, but the transfer was not then agreed to. On March 27 of the present year a special general meeting of the Society was again called to consider the matter, and it was then resolved "That in the opinion of this meeting the time has now come when this Society shall transfer its collections to some other museum." That this is a wise resolution most of those who know the museum and value its contents will cordially agree. Nor is this view inconsistent with the possession of a considerable amount of sentiment for the museum and its associations with the early history of the Society, with Greenough, Lonsdale, Fitton, Murchison, Leonard Horner, Daniel Sharpe, Falconer and others who actually worked in the museum or largely contributed to its stores. Those inspired with such sentiment would prefer to see the specimens well taken care of and accessible. It is reckoned that there are 2460 figured or described fossils. In the interests of geological science it is desirable that these be placed in the British Museum, Cromwell Road, where as many type-specimens as possible should be deposited; and it would not be difficult to find appropriate resting-places for all other specimens worthy of preservation.

The question is simply this: How can the specimens in the museum be best dealt with in the interests of geological science? And we hope the Society will soon settle it to the satisfaction of the fellows and of geologists in general.

### THE ROYAL SOCIETY CONVERSAZIONE.

THE conversazione held at the rooms of the Royal Society on May 8 was a very successful one, and a large gathering assembled to examine the many interesting objects contributed by the fellows and others. We regret that the pressure on our space does not permit the publication of the various explanations carefully given in the official catalogue. But some of the more important of the exhibits have already been referred to in our columns, and we propose to return to more of them later on.

Mr. J. E. S. Moore, the Tanganyika problem. This exhibit was intended to give some idea of the additions which have been made by Mr. Moore, during the second Tanganyika Expedition, to our knowledge of the faunæ in the great African lakes.

Dr. H. E. Annett and Mr. J. E. Dutton, of the School of Tropical Medicine, University College, Liverpool: (1) Specimens of some new blood Filariae, (2) specimens illustrating the life-history of *Ankylostoma duodenale* of the Chimpanzee. Mr. J. Mackenzie Davidson: (1) Stereoscopic transparencies of electrical discharges, and (2) skiagrams of bullet wounds. Mr. Eric S. Bruce, the meteo-parachute, a new instrument for investigating the upper atmosphere.

Commander D. Wilson-Barker, cloud photographs. Prof. J. W. Judd, F.R.S., on behalf of the Coral Reef Committee of the Royal Society, specimens of Foraminifera and Ostracoda, from Funafuti, Ellice Islands. Mr. H. J. Elwes, F.R.S., reversible drawers of butterflies from the Holarctic Region arranged to show wide distribution and adaptability to extremes of climate. Also to show variation and difficulty of applying binomial system of nomenclature. Mr. Killingworth Hedges, fulgurites, or lightning tubes, from the sand hills at Kensington, N.S.W.

Mr. J. E. Barnard and Dr. Allan Macfadyen exhibited luminous bacteria (from the Bacteriological Laboratory of the Jenner Institute of Preventive Medicine). The luminous bacteria are a group of organisms, whose natural habitat is sea-water. They are the cause of the so-called phosphorescence to be seen at times on such objects as dead fish, meat,

<sup>1</sup> An article on "The New Museum of the Geological Society" at Burlington House, appeared in NATURE for January 20, 1876, p. 227.

or other substances which are suitable soils for their growth and development. Their luminous properties are dependent on a supply of free oxygen and a suitable percentage of a soluble chloride in the nutritive medium. The exhibit consisted of artificial cultivations of these organisms on suitable nutrient soils, and showed their luminous properties and the variations that occur under different physical conditions.

Mr. Everard im Thurn, C.B., C.M.G., exhibited arrow-heads of rock crystal from British Guiana, and orchids growing wild in British Guiana; Mr. Vaughan Cornish, photographs of waves, &c., in sand, cloud and snow; Mr. J. Wimshurst, F.R.S., photographs which exhibit some of the properties of the light emitted by Röntgen ray tubes; Mr. Hugh Ramage, diagrams of corresponding lines in homologous spectra; the Meteorological Office, pilot charts of the North Atlantic and Mediterranean for April and May, 1901; the Cambridge Scientific Instrument Company, Ltd., Callendar and Griffith's patent temperature indicator, and photographs of the spectroscope, made for Sir David Gill, for use with the McClean telescope, Royal Observatory, Cape of Good Hope; and the Carl Zeiss Optical Works, stereoscopic binocular range-finder. The reading is taken direct from a scale within the instrument without calculations, giving the distances in meters. Range from 75 to 3000 meters; Prof. J. C. Bose, experiments on binocular alternation of vision; and Mr. R. Shelford, swords and knives from Sarawak, Borneo.

The Director, British Museum (Natural History), exhibited models illustrating the structure of the gills of bivalve mollusca; examples of mormyrid fishes from the Nile; a series of adult and young birds and eggs of the Adelia penguin (*Pygoscelis adeliae*); trephined skulls of natives of the Bismarck Archipelago, collected by the Rev. J. Crump and deposited in the British Museum by Mr. W. E. de Winton. These skulls illustrate native methods of performing the operation of trephining, and are of especial interest owing to the clinical histories of their owners being known. Claw and tooth of Neomylodon Patagonia, and coloured model of the right whale; Prof. A. G. Greenhill, F.R.S., showed a reflecting stereoscope; trochleostatic—diagram and models of pulleys; Mr. C. V. Boys, F.R.S., tool grinding appliance; Dr. Dawson Turner, a mechanical interrupter for an induction coil; and the Marine Biological Association, examples of marine plankton from the neighbourhood of Plymouth. The term marine plankton is used to denote organisms whose normal mode of life is to swim freely in the sea-water, in contradistinction to such as live in contact with the sea-floor. The Observatory, Cambridge, exhibited a machine for measuring astronomical photographs; and Prof. Callendar, F.R.S., a standard barometer.

Photographs of Nova Persei were exhibited by Sir Norman Lockyer, K.C.B., the Rev. W. Sidgreaves, S.J., and Mr. Frank McClean, F.R.S.

The Zoological Society of London exhibited living specimens of the Heloderm (*Heloderma suspectum*) from Arizona, the only venomous lizard known; Dr. J. H. Gladstone, F.R.S., ancient Egyptian gold; Mr. W. Flinders Petrie, casts and photographs of Egyptian jewellery of the 1st dynasty, 4700 B.C., and specimens of molecular transference in ancient bronze; Prof. A. W. Rücker, Sec. R.S., and Prof. J. W. Judd, C.B., F.R.S., specimens of atmospheric dust which fell at Taormina, Sicily, during the month of March, giving rise to the so-called "blood rain"; Sir W. Roberts-Austen, K.C.B., masses of chromium, manganese, ferro-titanium and cobalt. These specimens of metal were reduced from their oxides by means of finely divided aluminium, by Dr. Hans Goldschmidt.

Dr. P. L. Sclater, F.R.S., exhibited two bandoliers from the Semliki Forest, Congo Free State, made from the skin of a new mammal; Dr. H. Woodward, F.R.S., coloured casts of objects of natural history, prepared at the British Museum (Natural History); an enlarged model of the shell of *Ascoceras*, a cephalopod occurring in the silurian rocks of England, Sweden and North America; and table of British strata, coloured; Mr. G. Abbott exhibited symmetrical concretions, and "growth" in inorganic matter. Also specimens of four varieties of the cellular or magnesian limestone of Sunderland (Permian), which show a striking resemblance to corals, yet are believed to be only concretionary and inorganic. Hon. Walter Rothschild, M.P., exhibited leg bones and egg of *Aepyornis titan*, Madagascar; Mr. W. Duddell exhibited the musical arc. If a direct current arc between solid carbons be shunted by a suitable self-induction and condenser in series, alternating currents will flow round the shunt circuit, the arc thus converting part of the direct

current into alternating current. The frequency of the alternating current is determined, as in the case of the oscillatory discharge of a Leyden jar, by the capacity and the self-induction of the circuit. These alternating currents superposed on the direct current through the arc will cause it to emit musical notes, the pitch of which can be varied by altering the capacity or self-induction, and a tune can be played on the arc by this means.

The Telegraphone Syndicate exhibited the telegraphone. This instrument, the invention of Mr. Poulsen, of Copenhagen, depends for its action upon the fact that the variations of the magnetic field of an electro-magnet are so accurately represented by the magnetisation of a steel wire which is drawn through it, that if the wire be again passed through the field, currents exactly similar to those which produced the magnetisation of the wire are reproduced in the coils of the magnet. This principle has been applied to the reproduction of speech transmitted through an ordinary microphone transmitter.

The following demonstrations were given by means of the electric lantern:—Dr. Arthur Rowe, life-zones in the White Chalk, and their significance in connection with the evolution of species; Mr. Francis Fox, some engineering problems and their solution; Prof. Silvanus P. Thompson, F.R.S., kinematograph diagrams, illustrating magnetic fields.

### THE NATIONAL ANTARCTIC EXPEDITION.

PROF. J. W. GREGORY has to-day (May 15) cabled his resignation of the leadership of the scientific staff of the National Antarctic Expedition in circumstances which will shortly be fully explained to the Fellows of the Royal Society by one of their number.

The great majority of scientific men in this country were confident that Prof. Gregory possessed unique qualifications for the post of scientific leader of an expedition in which many branches of science required study and coordination. Under his direction, and with a competent naval head who should have an absolute veto upon all operations which involved risk to ship and crew, great scientific results were assured.

The opposition of the representatives of the Royal Geographical Society, which had obtained most of the funds voluntarily subscribed, and of a few scientific men belonging to the Navy, rendered it impossible that these full powers could be granted; but a compromise acceptable to Prof. Gregory was passed by a large majority (16 to 6) of the Joint Antarctic Committee, including the officers of both societies and almost every expert on their joint lists.

The compromise provided, in the words submitted on February 12 to the joint committee, "that a landing party, if possible, be placed on shore, under the charge of the Director of the Civilian Scientific Staff." Prof. Gregory was informed of this, accepted it, and, the next day, sailed for Melbourne.

The Royal Geographical Society's council refused to accept the compromise, and deputed three of their number to suggest to the officers of the Royal Society that the matter should be settled by a new committee of six, three to be appointed by each council. The Royal Society consented; the committee, chiefly composed of non-experts, met, and proposed modifications which Prof. Gregory has been unable to accept.

We shall await with some interest to see whether the majority of Fellows of the Royal Society, and of other scientific men in this country, will approve the manner in which the Royal Society has acted as the guardian of scientific interests.

### NOTES.

INTELLIGENCE has just reached us from Melbourne that on April 10 news had been received from Charlotte Waters, both by letter and telegram, of the safety of Prof. W. Baldwin Spencer and his energetic co-explorer, Mr. Gillen. They report themselves in good health and already busy taking phono-